Designing Methods of Optimum Coding (Cont.)

SOV/6530

devising such codes. Technical possibilities of producing optimal codes with the use of computers are evaluated. The concepts of the entropy, speed of transmission, traffic capacity, etc., which were formally introduced into the theory of information, appear as certain characteristic constants in the book. The author thanks A. S. Monin, Doctor of Physical-Mathematical Sciences, V. T. Siforov, Corresponding Member of the Academy of Sciences USSR, V. T. Buminovich, Doctor of Technical Sciences, and V. D. Zubakov, Candidate of Technical Sciences for their cooperation. There are 44 references: 28 Soviet and 16 non-Soviet.
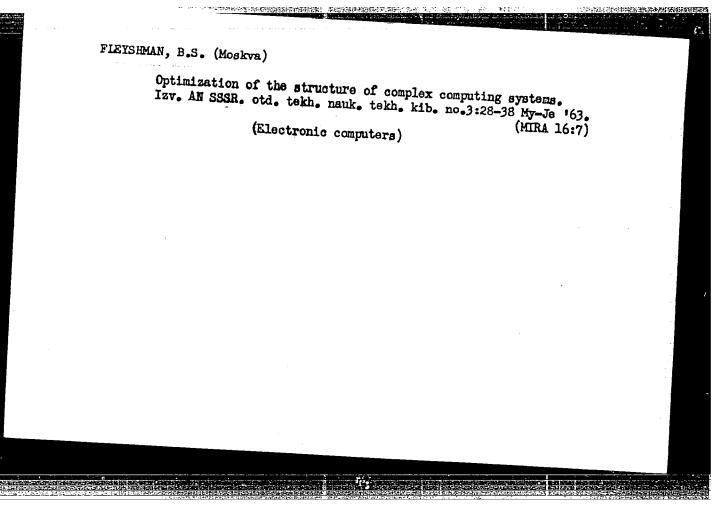
TABLE OF CONTENTS:

FLEYSHMAN, B.S. (Moskva)

Optimization of the structure of complex computing systems.
Izv. AN SSSR. otd. tekh. nauk. tekh. kib. no.3:28-38 My-Je '63.

(Electronic computers)   (MIRA 16:7)

L 17290-63

ACCESSION NR: AP3004362

2

code which attains the goal only with a certain probability. However, it is pointed out that with longer code words, the probability approaches unit much quicker than the probability of correct decoding. The algorithm, which selects at random input words from a definite general set, can be replaced by an appropriate regular algorithm for yielding pseudo-random input words. By this method, a large volume of memory can be avoided. "In conclusion, I wish to thank V. I. Siforov and V. I. Bunimovich for discussing the results of the above work and for their valuable comments." Orig. art. has: 24 formulas.

ASSOCIATION: none

SUBMITTED: 19Jun62   DATE ACQ: 20Aug63   ENCL: 00

SUB CODE: CO   NO REF SOV: 011   OTHER: 007

Card 2/2

L-17290-63
ACCESSION NR: AP3004362   EWT(d)/FCC(w)/BDS   AFFTC/IJP(C)
S/0109/63/008/008/1291/1300

AUTHOR: Fleyshman, B. S.

TITLE: Fundamental theorems of constructive theory of optimum encoding for a noisy discrete channel[.Reported at the Scientific and Technical Society of Radio Engineering and Electrocommunication in 1959, 1960, 1961, and also at the Fourth All-Union Mathematical Congress, July, 1961, Leningrad]

SOURCE: Radiotekhnika i elektronika, v. 8, no. 8, 1963, 1291-1300

TOPIC TAGS: optimum encoding, encoding theory

ABSTRACT: Transmission over a discrete noisy zero-memory channel is considered theoretically. The building of a Shannon-optimum code is a generalization of an earlier author's work on a similar code for a binary symmetrical channel (Tr. Nauchno-tekhn. ob. radiotekhn. i svyazi, no. 3, 1959, GEI, pp. 59-95). An algorithm is developed for selecting M input words of the optimum

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L 58540-65

ACCESSION NR: AP5012873   UR/0280/65/000/002/0025/0034

Fleyshman, B. S. (Moscow); Krapivin, V. F. (Moscow)   B

TITLE: Procedure of selecting a multivariable parameter on a digital computer

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1965, 25-34

TOPIC TAGS: digital computer

ABSTRACT: This is a continuation of one of the authors' previous works where a time-saving procedure of simultaneous scanning of N_i values of individual components b_i was set forth, the unknown parameter $b = (b_1, b_2, \ldots, b_n)$ and its component b_i can take on one of N_i possible values. The present article determines the probabilities of (a) idle time of devices intended for selecting the true value of components of the vector parameter and (b) overflow of the storages intended for devices. Also, necessary storage capacities are determined for the computer evaluation of a multivariable parameter by means of ...

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L 58540-65

ACCESSION NR: AP5012873

0

(a) with a constant waiting time and (b) with a constant number of "candidates" (number of variants analyzed). An examination of the resulting estimates shows that the general storage capacity and time delays needed for reliable realization of these procedures are insignificant as compared to the basic storage capacity and the total worktime calculated from an average harmonization of flows of the materials going from one device over to another. It is pointed out that a linear relation exists between the machine time T and the number N of different values of components and their total number k, in the simple scanning case. Orig. art. has: 2 figures, 52 formulas, and 3 tables.

ASSOCIATION: none

SUBMITTED: 08Apr64   ENCL: 00   SUB CODE: DP

                    06   OTHER: 000

Card 2/2

ACCESSION NR: AP5016966   UR 0280

_____, B. S. (Moscow); Krapivin, V. F. (Moscow)

TITLE: Regular method for the solution of games with a sectionally constant
gain function

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 3, 1965, 17-23

TOPIC TAGS: game solving method, gain function, optimum game strategy, game
theory

ABSTRACT: There are numerous calculational methods for finding the optimum
strategy in various types of games (separable games, convex gain functions, etc.).
The present paper outlines a regular method for the solution of games with
sectionally constant gain functions, yielding expressions for optimum strategy
in terms of the initial parameters of the problem. [...] the case
of players with a null sum, the gain function depending on the difference of
arguments, and the solution is obtained in [...] mixed strategies. The particular [...]
[...] of four-step gain functions, [...]
[...] the general case. Under [...]

ACCESSION NR: AP5016966

method may be used for approximate calculation of continuous games. In the case of a game with noise when the players process distorted information about the previous moves, equations are derived with respect to the uncertain strategy conditions. "The authors thank D. B. Yudin for numerous valuable remarks incorporated into the final version of the paper." Orig. art. has: 55 formulas.

ASSOCIATION: none

SUBMITTED: 25Jun64   ENCL: 00   SUB CODE: MA

NO REF SOV: 004   OTHER: 002

Card 2/2

L .../... ..5   ЭЖТ(d)   Pae-2/P;-4/P..-4
ACCESSION NR: AP5013335   UR/0109/65/010/... ....
                                  621.391.15*

AUTHOR: Fleyshman, B. S.

TITLE: Parallel decoding for a discrete noisy channel

SOURCE: Radiotekhnika i elektronika, v. 10, no. 5, 1965, 817-826

TOPIC TAGS: decoding, parallel decoding

ABSTRACT: In the Shannon-optimal coding, the amount of decoding computations increases exponentially with the length of code words. For a discrete channel with independent noise, a procedure is proposed of simultaneous (parallel) decoding of m parts of the received code word. This procedure reduces the exponent order of computations within the range $0.5 R_c < H < C$ (where R_c is a computational parameter defined by J. M. Wozencraft and B. Reiffen in "Sequential Decoding," Wiley, NYC, 1961; H is the source entropy, C is the channel traffic capacity); the reduction by a factor of 5 to 10 takes place in a wide

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L 63056-65
ACCESSION NR: AP5013335

range of values $0.1 < \eta = H/C \leq 0.9$ for a high-level noise; for a high noise level, if the probability of correct decoding $P \leq 1 - 10^{60}$, the amount of computations is $N \leq n_1 \, m \times 10^6$; the time of parallel decoding is believed to be practically acceptable. Areas of applicability of various coding and decoding methods are graphically shown. "The author wishes to thank V. I. Muravyev for discussing the results and V. F. Krapivin for the numerical solution of the transcendent equations." Orig. art. has: 4 figures and 32 formulas

ASSOCIATION: none

SUBMITTED: 07Apr64   ENCL: 00   SUB CODE: EC, DP

NO REF SOV: 003   OTHER: 006

Card 2/2

L 64283-65   EWT(d)/T/EED-2/EWP(1)   IJP(c)   BB/GG

ACCESSION NR: AP5021880   UR/0020/65/163/006/1331/1333

AUTHOR: Fleyshman, B. S.

TITLE: Parallel decoding

SOURCE. AN SSSR. Doklady, v. 163, no. 6, 1965, 1331-1333

TOPIC TAGS: computer language, computer coding, cybernetics, computer theory, digital decoder

ABSTRACT: A number of new evaluations of parallel decoding parameters are given. The parallel decoding procedure is as follows. The received output word x_n' of length n is divided into m subwords $y_1, \ldots, y_r, \ldots, y_m$ of lengths

$$n_1^m, \ldots, n_r^m, \ldots, n_m^m \left(\sum_{r=1}^{m} n_r^m = n \right)$$

In a similar manner, the input word $x = (i_1, \ldots, i_n)$ is divided into m subwords $x_1, \ldots, x_r, \ldots, x_m$ each of which codes one of $N. \approx \exp(n.^mR)$ different highly and distinguishable subwords of the source of length $n_r^m \geq n_0 > 5$. The simultaneous sorting procedure previously described by the author ("Constructive Methods of Op-

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L 0L/51-65

ACCESSION NR: AP5021880

timum Coding for Channels with Noises," *Izd. AN SSSR*, 1963; *Izv. AN SSSR, Tekhnich. kibernetika*, No 3, 28 [1963]) is then used for sorting the M possible values of

... in this sorting method, "composite" subwords r_i ... r_r of ... are fed to each analyzer. The decision ... the compde... ... the following analyzer is made by comparing ... subword ...

$$i_r = \sum_{s=1}^{} \sum_{ij} \frac{m_{ij}'}{n_r} \ln \frac{r_i}{q_i}, \qquad m_{ij}' = m_{ij}(x_s, y_s)$$

... symbols (i, j) at the corresponding locations in subwords x_s and y_s;

$$q_j = \sum_i p_i p_i', \quad p_i = \mathrm{Prob}(i), \quad C = \max_{(p_i)} E_1,$$

$$\sum_{ij} p_i q_j \ln \frac{r_i'}{q_j} = E_0 < X_r^m < E_1 = \sum_{ij} p_i p_i' \ln \frac{p_i}{q_i} < - E_0.$$

... of h_m at large values of n, and other parameters of the pro-
... are determined. Preliminary experiments have indicated that the

ACCESSION NR: AP5021880

full machine time necessary for parallel decoding on a digital computer
falls within reasonable limits. Orig. art. has: 1 figure, 11 formulas   [14]

__ __ N. Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of
Radio Engineering and Electronics, Academy of Sciences, SSSR)

__ __ __ Jan65   ENCL: 00   SUB CODE: DP

NO REF SOV: 003   OTHER: 005   ATD PRESS: 4083

Card 3/3

ACC NR: AP6035643

SOURCE CODE: UR/0280/66/000/005/0014/0023

AUTHOR: Fleyshman, B. S. (Moscow)

ORG: none

TITLE: On the viability of complex systems

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 5, 1966, 14-23

TOPIC TAGS: interference immunity, interference reduction, automatic control design

ABSTRACT: Active protective elements are introduced for the protection of a system against external undesirable effects. An optimum formulation of the problem for the viability of a system is presented. The optimum behavior of the medium and the optimal structure of the system are established. The advantages of an optimum system are evaluated. It is assumed that the operating and protective elements of a system are subjected to the detrimental actions of an external medium. In this system, the protective elements serve as active external agents of the system which suppress or neutralize the harmful actions of the external medium. The operating elements of the system are called the a-elements while its protective elements are called the R-elements. The formulation of the problem considers the structure of the system, the behavior of the medium, the interaction of the system with the medium, the behavior of the system, stochastic processes, and the basic relationships associated with system failure. The fol-

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ACC NR: AP6035643

lowing cases are solved: a two step problem, the case when the action of R-elements is independent, and the optimal protection of the system structure. It is concluded that the harmful action of an external medium on the system may be neutralized by introducing redundant protective elements. The optimum behavior structure is established for a medium which acts uniformly on a system which is uniformly filled with elements. The optimization of the system structure increases by several orders of magnitude the number of harmful active medium agents which are necessary to cause the system to fail or, in other words, substantially reduces the number of protective elements which are necessary to prevent system failure. Orig. art. has: 1 figure, 33 formulas.

SUB CODE: 09,12/   SUBM DATE: 22Apr66/   ORIG REF: 002

Card 2/2

Fleyshkin, D.G.

AUTHORS: Fleyshman, D.G. and Protopopov, Kh. V.   120-6-26/36

TITLE: An Application of the Fluorescence of Glass for Producing
          Short Pulses of Light. (Ispol'zovaniye flyuorestsentsii
          stekla dlya polucheniya korotkikh impul'sov sveta)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6,
                              pp. 101 - 103 (USSR).

ABSTRACT: The following methods are normally used to obtain short
        pulses of light: 1. Kerr cell (Refs. 1 and 2); 2. Gas dis-
        charges (Refs.3 and 4); 3. Mechanical chopping devices such
        as the stroboscopic disc or rotating mirror (Refs. 3 and 5).
        These methods either involve considerable difficulties or do not
        produce a "rectangular" pulse. In the present work, the source
        of light pulses was the fluorescence of glass envelopes of
        usual radio valves produced during the working of these valves
        as a result of bombardment of the envelopes by scattered elec-
        trons (Ref.7). The colour of this fluorescence is bluish. The
        circuit used is shown in Fig.1. The valve under investigation
        was placed above a photomultiplier. The valve works in such
        a way that in the absence of a triggering pulse on the control
        grid of the valve the latter was fully cut off. In this way,
        the current through the valve (and the luminescence of the
Card1/2 envelope) only takes place during the action of the signal on

120-6-26/36

An Application of the Fluorescence of Glass for Producing Short
Pulses of Light.

the grid. It is also necessary to minimise the amount of
light from the cathode. This is achieved by lowering the
temperature of the latter. The valve used was the ГI-50 pen-
tode, triode connected. The fluorescence of the glass in the
case of the ГI-50 is stronger by a factor of 1.5 than that
produced by γ-rays from Co^{60} in a NaI(Tl). Experiments were
also carried out on the valve 6ПSC. The mean output current
from the photomultiplier, placed immediately above the valve, is
a linear function of the mean current through the valve. Figs.
2 and 3 show that for pulse widths up to 10^{-7} sec the form of
the light pulse is a good replica of the form of the electrical
input pulse. It is pointed out that the device may be consid-
erably improved if, instead of ordinary valves, specially
designed valves were to be used. There are 8 figures and 8
references, 7 of which are Slavic.

ASSOCIATION: Institute of History of Material Culture (Leningrad Branch)
              (Institut istorii material'noy kul'tury (Leningradskoye
              otdeleniye).
SUBMITTED: March 25, 1957.
AVAILABLE: Library of Congress.
Card 2/2

SOV/120-59-1-36/50

AUTHORS: Fleyshman, D. G., Shakhidzhanyan , L. G.

TITLE: Reduction of the Background in Measurements of Small Activit-
ies in Liquid Scintillation Counters (Snizheniye fona pri
izmereniyakh malykh aktivnostey v zhidkikh stsintillyatsionn-
ykh schetchikakh)

ABSTRACT: A normal liquid scintillation counter consists of a glass
container with a liquid scintillator into which the specimen
is introduced in the form of a solution or suspension (Ref 3).
The container is in an optical contact with a photomultiplier
cathode. . In this way the container and the photomultiplier
are within the surrounding screen whose purpose is to cut down
the background. It is of some interest to find out what is
the contribution to the background due to the materials which
make up the photomultiplier and the container. A number of
workers have pointed out that natural K^{40} in the glass envel-
ope of the photomultiplier does contribute to the background

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SOV/120-59-1-36/50

Reduction of the Background in Measurements of Small Activities in
Liquid Scintillation Counters

while in crystal scintillation counters part of the background
is also due to K^{40} both in the container and the crystal its-
elf (Ref 5). In the case of liquid scintillators the problem
is complicated by the fact that a considerable number of
β-particles as well as γ-quanta have sufficient energy to
leave the glass container and enter the scintillator where
they are recorded. The number of β-particles emitted by K^{40}
is greater by a factor of 8 than the number of γ-quanta.
Measurements were carried out by placing in the container
with a liquid scintillator small pieces of glass of various
kinds and measuring the number of pulses in a given interval
of time. The counting system consisted of a photomultiplier, an
amplifier, a discriminator and a scaling unit. The threshold
of the discriminator was 50 Kev. Results obtained show that
glasses used in the manufacture of photomultipliers contain a
considerable amount of K^{40}. The activities of other materials
which are included in photomultipliers were measured. Only mica
was found to have a measurable activity. It is suggested that
quartz should be used for the containers and the glass Nr 46
(molybdenum) for the photomultiplier. Plexiglass containers
Card 2/3 have also been found to be very convenient and free of activity.

SOV/120-59-1-36/50

Reduction of the Background in Measurements of Small Activities in Liquid Scintillation Counters

A replacement of glass containers by plexiglass containers reduces the background by a factor of 4-7. There are 2 tables, no figures and 5 references, of which 4 are English and 1 is Soviet.

ASSOCIATION: Institut evolyutsionnoy fiziologii AN SSSR (Institute of Evolutionary Physiology of the Academy of Sciences of the USSR).

SUBMITTED: January 23, 1958.

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05466
SOV/120-59-3-37/46

AUTHORS: Kolenko, Ye. A., Protopopov, Kh. V., Fleyshman, D. G.,
           and Yur'yev, V. G.

TITLE: Thermoelectric Cooling of Photomultipliers
         (Termoelektricheskoye okhlazhdeniye fotoumnozhiteley)

ABSTRACT: The device is seen in section in Fig 1; the cooler 11
         consists of 80 junctions joined in series and embedded in
         epoxide resin. The cold ends are in contact with part 3,
         which touches the glass via springs 2. Cylinder 9 is
         of insulating material. The heat is removed by the
         chassis 4. The light enters through a hole in the
         chassis and cooler; the device is meant for use with
         star-followers. Fig 2 shows another model, in which
         the heat is removed by water; the device is meant for
         use in assays for natural ^{14}C. The units consume
         20 - 25 W and provide temperatures 30 - 35°C below
         room temperature (about -10°C at the photocathode) over
         volumes of some 800 cm^3. The photocathode must be
         earthed in this system. Fig 3 shows the noise spectrum
         of an 11-stage multiplier relative to a solution of
Card 1/2 p-terphenyl (5 g/litre) at two temperatures. Fig 4

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SOV/120-59-3-37/46

Thermoelectric Cooling of Photomultipliers

shows similar curves for four different types of
multiplier; the cooler raises the efficiency of the
system for ^{14}C to about 90%. There are 4 figures and
4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Institut poluprovodnikov AN SSSR (Institute of
Semiconductors, Academy of Sciences USSR)

SUBMITTED: May 7, 1958

Card 2/2

21(3)

AUTHORS: Fleyshman, D. G., Shakhidzhanyan, L. G.   SOV/89-6-6-13/27

TITLE: A New Scintillating Gel for Measuring the Activity of
                Suspensions (Novyy stsintilliruyushchiy gel' dlya izmereniya
                aktivnosti suspenziy)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 6, p 669 (USSR)

ABSTRACT: The present "Letter to the Editor" contains a lecture delivered
                in February 1958 in Leningrad on the occasion of the All-Union
                Methodical Congress on the Determination of Small Amounts of
                Radioactive Substances in Material. The measurement of the
                activity in samples by means of a liquid scintillator is espe-
                cially important for biological investigations. In the beginning
                the application of liquid scintillation counters was restricted
                in so far as the samples often had to undergo a complicated
                chemical treatment for the purpose of producing them as com-
                pounds which were soluble in the liquid scintillator. In 1955
                it had already been suggested to introduce the samples into
                the scintillator in the form of suspensions and in 1956 was
                already reported on the application of scintillation gels.
Card 1/3   Such gels are obtained by adding aluminum stearate to the

A New Scintillating Gel for Measuring the Activity of   SOV/89-6-6-13/27
Suspensions

normal liquid scintillator and by heating the colloidal so-
lution thus obtained up to 70°C. Reference is also made to
the use of the preparation "Thixcin". The authors of the pre-
sent paper developed a new scintillation gel for the investi-
gation of substances containing very small amounts of radio-
active materials. Generally plexiglass which at room temper-
ature is only difficultly soluble in toluene was used as gel-
forming substance; if, however, plexiglass chips are added to
the liquid scintillator (4 g/l p-terphenyl and 0.1 g/l POPOP
in toluene), and if the mixture is heated to ∿ 100°C a well
scintillating gel forms within some minutes. The amount of
plexiglass may be widely varied - according to the desired
viscosity of the gel, in general 5 - 8 weight % are taken. Such
a gel shows high transparency as compared to the natural radia-
tion. In the following the authors describe the introduction
of the preparation to be investigated into the gel. The appli-
cation of the photomultiplier FEU-S and FEU-1BS with low noise
level yields satisfactory results. In conclusion, the authors
thank V. V. Glazunov for assistance in the measurements, and

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A New Scintillating Gel for Measuring the Activity of   SOV/89-6-6-13/27
Suspensions

N. S. Khlebnikov for having put   at their disposal the photo-
multiplier with the low noise level. There are 5 references,
2 of which are Soviet.

SUBMITTED: April 16, 1958

Card 3/3

24(0)

AUTHORS: Shakhidzhanyan, L. G., Fleyshman, D. G., SOV/20-125-1-57/67
           Glazunov, V. V., Leont'yev, V. G.,
           Nesterov, V. P.

TITLE: Measurement of the Natural Radioactivity in Human Organs
           (Izmereniye yestestvennoy radioaktivnosti v organakh cheloveka)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 208-209
           (USSR)

ABSTRACT: During the past years the interest in investigating the
           influence exercised by small doses of ionizing radiation upon
           living organisms has increased. The radioactivity mentioned in
           the title is one of the permanently acting factors upon human
           and animal organism. It is due to several isotopes which are
           parts of all organs and tissues:
           K^{40}, C^{14}, Ra^{226} etc. As a result of nuclear-weapon-tests the
           radioactivity in man has somewhat increased. The following
           fission-products entered his body:
           Sr^{90}, Cs^{137}, J^{131} and even more C^{14} from H-bomb explosions. The
           present paper gives data on the natural radioactivity of the
Card 1/3   human organs which were obtained by measuring ash. For this

Measurement of the Natural Radioactivity in Human   SOV/20-125-1-57/67
Organs.

purpose served the method of counting suspensions in the
scintillating gel (Refs 1, 2). Table 1 gives a small part of
the results available of healthy man. At the same time table 1
provides data concerning the β-radiation due to
K^{40}. As it can be seen from this the entire β-activity exceeds
the activity caused by K^{40} by averagely 20-30%; this percentage
sometimes amounts to 70-80%. Measurements of the γ-activity of
several organs have shown that the additional radioactivity is
on the whole caused by Cs^{137} which penetrates the human organism
as a result of nuclear-weapon-tests by the well-known biological
course: soil - plant - animal - man. The results obtained give
evidence as to the fact that the hitherto produced contamination-
activity penetrates all human organs and tissues. There are
2 figures, 1 table, and 2 references.

ASSOCIATION: Institut evolyutsionnoy fiziologii im. I. M. Sechenova Akademii
              nauk SSSR (Institute of Evolutionary Physiology imeni
Card 2/3   I. M. Sechenov of the Academy of Sciences, USSR)

Measurement of the Natural Radioactivity in Human   SOV/20-125-1-57/67
Organs

PRESENTED: August 4; 1958, by L. A. Orbeli, Academician

SUBMITTED: August 4, 1958

Card 3/3

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PHASE I BOOK EXPLOITATION   SOV/5410

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy
energii, Tashkent, 1959.

Trudy (Transactions of the Tashkent Conference on the Peaceful
Uses of Atomic Energy) v. 2. Tashkent, Izd-vo AN UzSSR, 1960.
449 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR.

Responsible Ed.: S. V. Starodubtsev, Academician, Academy of
Sciences Uzbek SSR. Editorial Board: A. A. Abdullayev, Can-
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USSR, Academician, Academy of Sciences Uzbek SSR; Yu. N. Talanin,

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Transactions of the Tashkent (Cont.)   SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor
of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G.
Babakhanova.

PURPOSE : The publication is intended for scientific workers and
specialists employed in enterprises where radioactive isotopes
and nuclear radiation are used for research in chemical, geo-
logical, and technological fields.

COVERAGE: This collection of 133 articles represents the second
volume of the Transactions of the Tashkent Conference on the
Peaceful Uses of Atomic Energy. The individual articles deal
with a wide range of problems in the field of nuclear radiation,
including: production and chemical analysis of radioactive
isotopes; investigation of the kinetics of chemical reactions
by means of isotopes; application of spectral analysis for the
manufacturing of radioactive preparations; radioactive methods
for determining the content of elements in the rocks; and an
analysis of methods for obtaining pure substances. Certain

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Transactions of the Tashkent (Cont.)   SOV/5410

instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

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Institute of Evolutionary Physiology imeni T. M. Sechenova
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fiziki AN SSSR - Institute of Chemical Physics AS USSR]. Use of
the Deuteron-Exchange Method for Studying, Under Simulated Con-
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Berezkin, V. G. [Institut neftekhimicheskogo sinteza AN SSSR -
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Equipment for the Chromatographic Investigation of the Products
of Radiolysis of Hydrocarbons   425

Slovokhotova, N. A., A. T. Koritskiy, and N. Ya. Buben. [In-
stitute of Chemical Physics AS USSR]. Double Links in Poly-

Card 19/20

SHAKHIDZHANYAN, L.G.; FLEYSHMAN, D.G.; GLAZUNOV, V.V.; LEONT'YEV, V.G.;
        NESTEROV, V.P.

        Method of measuring β-activity in biological objects with the
        aid of scintillating gel. Med.rad. 5 no.10:72-74 '60. (MIRA 14:2)
                (BETA RAYS--MEASUREMENT)

S/120/62/000/003/009/048
E032/E114

AUTHORS: Fleyshman, D.G., and Glazunov, V.V.

TITLE: The use of an external standard in the determination
            of the efficiency and background of liquid
            scintillation counters

PERIODICAL: Pribory i tekhnika eksperimenta, no.3, 1962, 55-58

TEXT: The usual method of determining the efficiency of
liquid scintillators for beta-particles involves the introduction
of an external standard source which is dissolved in the
scintillator. This method is said to suffer from the disadvantage
that it involves the switching off of the high-voltage supplies
and other operations which may affect the photomultiplier
amplification and light collection. In order to avoid these
difficulties the authors have used an external standard (a gamma-
ray source). The gamma rays are Compton-scattered and give rise
to a continuous spectrum of Compton electrons which is analogous
to the beta-spectra of the specimens introduced into the
scintillator. Thus, if the beta-spectrum of a given isotope and
the Compton spectrum due to the external source are recorded under
Card 1/2

The use of an external standard ...   S/120/62/000/003/009/048
                                        E032/E114

identical conditions, then the spectra can be used as calibration
curves in subsequent determinations of beta-ray efficiency with
the aid of the external standard. The external standard can also
be used to simplify background determinations. This is done by
determining the background counting rate as a function of the
counting rate due to the external standard in a preliminary
experiment. The method has been used to estimate the absolute
activity of K^{40} in biological specimens.
There are 3 figures and 1 table.

ASSOCIATION: Institut evolyutsionnoy fiziologii AN SSSR
             (Institute of Evolutionary Physiology, AS USSR)

SUBMITTED: November 17, 1961

Card 2/2

SHAKHIDZHANYAN, L.G.; STARIK, A.S.; FLEYSHMAN, D.G.; GLAZUNOV, V.V.;
  LEONT'YEV, V.G.; NESTEROV, V.P.

Distribution of radioactive cesium and strontium in human and
animal organs. Izv. AN SSSR. Ser. biol. no.3:442-448 My-Je '62.
                                        (MIRA 15:6)
1. Institute of Evolutionary Physiology, Academy of Sciences
of the U.S.S.R., Leningrad.
    (CESIUM—ISOTOPES)   (STRONTIUM—ISOTOPES)
          (RADIOISOTOPES—PHYSIOLOGICAL EFFECT)

S/120/62/000/005/016/036
E032/E314

AUTHOR: Fleyshman, D.G.

TITLE: A study of statistical processes in scintillation counters

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962,
98 - 102

TEXT: This paper reports measurements of the "internal
efficiency" of scintillation counters incorporating various
types of Soviet photomultipliers [ФЭУ-С (FEU-S), ФЭУ-1Б (FEU-1B)
and ФЭУ-49 (FEU-49)]. The internal efficiency is defined as
"the average number of photo-electrons reaching the first dynode
for a given absorption of energy in the phosphor". The efficiency
was determined by a) making use of statistical relationships
and b) by direct comparison of pulse amplitudes obtained with
beta- or gamma-rays of given energy with the pulse amplitudes
.produced by exposing the first dynode to single electrons, e.g.
thermo-electrons emitted by a photocathode or photo-electrons
obtained by illuminating the photocathode with a low-intensity
beam so that the resulting pulses could be regarded as

Card 1/3

A study of ....

S/120/62/000/005/016/036
E032/E314

statistically independent. A standard application of Poisson's
statistics is then used to obtain a theoretical expression for
the pulse-height distribution. Comparison of this theoretical
distribution with experiments shows that for primary electrons
of 150 - 350 V and dynodes made of Cu + Al + Mg and AMГK (AMGK)
alloys (FEU-49, FEU-S and FEU-1B, respectively) the distribution
of secondary electrons does, in fact, follow Poisson's law.
The internal efficiency A (electrons/MeV) was found for NaI(Tl)
and a liquid scintillator (4 g/litre p-terphenyl + 0.1 g/litre
POPOP in toluene). The results obtained are summarized in the
following table:

FEU	A, electron/MeV	
	NaI(Tl)	Liquid scintillator
FEU-S	3300	460
FEU-1B	3900	550
FEU-49	1200	170

There are 2 figures and 1 table.
Card 2/3

A study of S/120/62/000/005/016/036
                                         E032/E314

ASSOCIATION: Institut evolyutsionnoy fiziologii AN SSSR
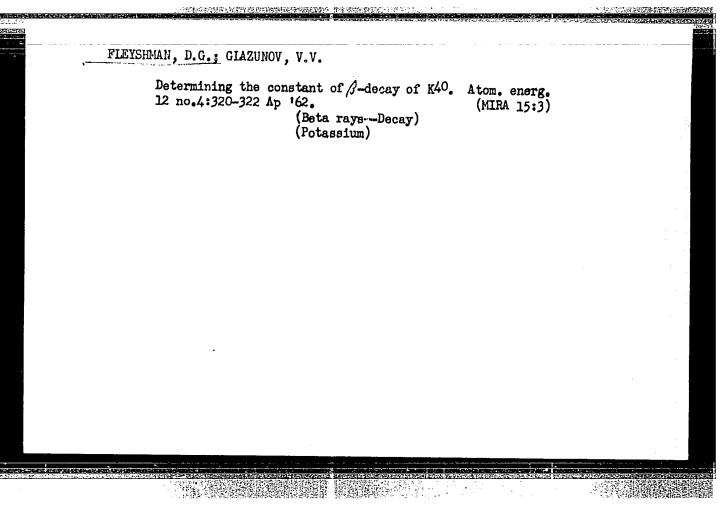   (Institute of Evolutionary Physiology, AS USSR)

SUBMITTED: September 4, 1961

Card 3/3

FLEYSHMAN, D.G.; GLAZUNOV, V.V.

Determining the constant of β-decay of K^{40}. Atom. energ.
12 no.4:320-322 Ap '62.   (MIRA 15:3)
                            (Beta rays--Decay)
                            (Potassium)

S/089/62/013/006/014/027
B102/B186

AUTHORS: Fleyshman, D. G., Burovina, I. V., Nesterov, V. P.

TITLE: The halflife of Cs^{137}

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 592 - 593

TEXT: From the many different methods of determining the Cs^{137} halflife
(cf. Phys. Rev. 99, 188, 1955; J. Inorg. and Nucl. Chem. 1, 241, 1955;
Canad. J. Chem. 39, 3, 1961) the authors chose that which consists in
measuring the decay rate and the quantity of isotope. The latter was ob-
tained by the method of isotope dilution and the Cs^{137} decay rate from the
β-activity measured in a liquid scintillator in 4π-geometry. Cs^{137} was
introduced as an aqueous solution of its nitrate into the scintillator;
the latter is described in Internat. J. Appl. Rad. and Isotopes, 1, 46,
1956. An ФЭУ -1Б (FEU-1B) multiplier was used for recording β-particles.
The efficiency was about 93%. The integral spectra of Cs^{137}+Ba^{137m} were
recorded with a fast pulse-height discriminator and an АИ -100-1 (AI-100-1)
pulse-height analyzer. Since the betas from Cs^{137} are accompanied by

Card 1/2

The halflife of Cs^{137} S/089/62/013/006/014/027
B102/B186

661-kev gammas from Ba and also by conversion electrons, the contributions of these particles was determined carefully. The recording efficiency of the conversion electrons was 100%, that of the gammas 9.5% in plastic ditches and 8% in glass ditches (both ±2%). 100 β-particles are accompanied by 82 γ-quanta and 10 conversion electrons. The Cs^{137} content in the solution was determined to an accuracy of $(1.11\pm0.01)\cdot10^{-9}$ g/g, resulting as the RMS error from 16 measurements. The halflife calculated from these data was (30.1 ± 0.7) years and is in good agreement with results obtained by other authors. There are 2 figures and 1 table.

SUBMITTED: January 18, 1962

Card 2/2

BUROVINA, I.V.; NESTEROV, V.P.; FLEYSHMAN, D.G.

Mass-spectrometric method of determining the microquantities of
cesium. Radiokhimiia 5 no.2:272-276 '63.   (MIRA 16:10)

GLAZUNOV, V.V.; PARCHEVSKIY, V.P.; FLEYSHMAN, D.G.

Change in the content of fractional fission products in Cystoseira
of the Black Sea. Dokl. AN SSSR 152 no.5:1222-1224 O '63.
(MIRA 16:12)
1. Sevastopol'skaya biologicheskaya stantsiya im. A.O.Kovalevskogo
AN SSSR i Institut evolyutsionnoy fiziologii im. I.M.Sechenova
AN SSSR. Predstavleno akademikom A.L.Kursanovym.

BUROVINA, I.V.; NESTEROV, V.P.; SKUL'SKIY, I.A.; FLEYSHMAN, D.G.

Characteristics of the accumulation of cesium-133 and cesium-137
in the human and animal brain. Dokl. AN SSSR 154 no.5:1229-
1230 F'64.   (MIRA 17:2)

1. Predstavleno akademikom V.N. Chernigovskim.

FLEYSHMAN, F.M.; BOBROVA,L.I. Prinimali uchastiye: NEDOPEKIN. G.K.;
    GRIGOR'YEV, A.N.; USENKO, L.A., tekhn. red.

[Analysis of the production and economic operations of a rail-
road division; methodological textbook]Analiz proizvodstvenno-
khoziaistvennoi deiatel'nosti otdeleniia dorogi; metodiche-
skoe posobie. Moskva, Transzheldorizdat, 1961. 119 p.
                                        (MIRA 15:10)
1. Russia (1923- U.S.S.R.)Ministerstvo putey soobshcheniya.
TSentral'nyy nauchno-issledovatel'skiy institut Ministerstva
putey soobshcheniya (for Fleyshman, Bobrova). 2. TsPEU (for
Nedopekin).
                (Railroads--Management)

TRUBIKHIN, M.G., kand. ekon. nauk; FLEYSHMAN, F.M., kand. ekon. nauk;
KREYNIN, A.V., kand. ekon. nauk

Principles for establishment of freight rates on socialist
railroads. Vest. TSNII MPS 22 no.7:49-52 '63.   (MIRA 16:12)

ABRAMOV, A. P., kand. ekonom. nauk; SIMANOVSKIY, M. A., kand. ekonom. nauk; TRUBIKHIN, M. G., kand. ekonom. nauk; FLEYSHMAN, F. M., kand. ekonom. nauk

Ways of improving the planning and material incentive in railroad management. Zhel. dor. transp. 45 no.1:55-60 Ja '63.
(MIRA 16:4)

(Railroads—Management)

TRUBIKHIN, M.G., kand. ekonom. nauk; FLEYSHMAN, F.M., kand. ekonom. nauk;
KREYNIN, A.V., kand. ekonom. nauk; KRISHTAL', L.I., red.

[Principles for the establishment of railroad freight rates in
socialist management]. Printsipy postroeniia zheleznodorozhnykh
gruzovykh tarifov v sotsialisticheskom khoziaistve. Moskva,
Transport, 1964. 46 p. (Moscow, Vsesoiuznyi nauchno-issledovatel'-
skii institut zheleznodorozhnog transporta, Trudy, no.278).
(MIRA 17:7)

GRIGOR'YEV, Aleksandr Nikolayevich; KALMYCHIN, Ivan Fedorovicn;
FLEYSHMAN, Feliks Moiseyevich; KOLTUNOVA, M.P., red.

[Analysis of the administrative operations of the line
enterprises of a railroad] Analiz khoziaistvennoi deiatel'-
nosti lineinykh predpriiatii zheleznoi dorogi. Moskva,
Transport, 1965. 294 p.   (MIRA 18:4)

TRUBIKHIN, M.G., kand. ekonom. nauk; FLEYSHMAN, F.M., kand. ekonom. nauk

Basic principles in establishing freight rates. Zhel. dor. transp.
47 no.7:74-76 Jl '65.   (MIRA 18:7)

FLEYSHMAN, F.M., kand. ekonom. nauk

Improve the planning of railroad income and profits. Zhel.
dor. transp. 47 no. 11:75-78 N '65   (MIRA 19:1)

BUROVINA, I.V.; GLAZUNOV, V.V.; LEONT'YEV, V.G.; NESTEROV, V.P.; SKUL'SKIY, .
    I.A.; FLEYSHMAN, D.G.; SHMITKO, M.N.

Content of lithium, sodium, potassium, rubidium and caesium in the
muscles of marine animals of the Barents and Black Seas. Dokl.
AN SSSR 149 no.2:413-415 Mr '63.   (MIRA 16:3)

1. Institut evolyutsionnoy fiziologii AN SSSR. Predstavleno akademikom
A.P.Vinogradovym.
  (MARINE FAUNA) (MINERALS IN THE BODY) (MUSCLE)

GLUKH, Ye.M., inzhener; FLEYSHMAN, L.S., inzhener.

Static phase shifter for grid control of mercury-arc rectiviers.
Vest. elektroprom. 27 no.10:35-39 O '56.   (MIRA 10:9)

1. Zavod "Uralelektroapparat."
      (Mercury-arc rectifiers)   (Electric controllers)

FLEYSHMAN, L.S., inzhener.

A three-phase bridge circuit for traction substations. Elektriche-
stvo no.10:49-53 O '57.   (MLRA 10:9)

1. Zavod "Uralelektroapparat."
          (Electric railroads--Substations)

FLEYSHMAN, L.S.

Using three-phase bridge systems in high-power rectifier units.
Elek. i tepl. tiaga no.6:20-23   Je '58.   (MIRA 11:6)

1.Starshiy inzhener zavoda "Uralelektroapparat."
                (Mercury-arc rectifiers)

8(2)

AUTHORS: Fleyshman, L. S., Engineer, Gel'man,   SOV/1o5-58-11-1o/28
               M.V., Engineer

TITLE: Investigation of Inverter Duty of Type   RMNV-500 x 6
               (Issledovaniye invertornogo rezhima vypryamiteley
               RMNV-500 x 6)

PERIODICAL: Elektrichestvo, 1958, Nr 11, pp 43 - 47 (USSR)

ABSTRACT: In this paper the causes for an unstable operation of
               an inverter rectifier are exposed. The investigations were
               carried out in the Laboratory for Mercury-Arc
               Rectifiers of the "Uralelektroapparat" plant. This
               paper also includes results of the tests which were
               made with special measures for increasing the reliability
               of the inverter mode of operation. When making a
               choice between different circuit conditions of an
               inverter unit, the following three circuits come into
               the picture : 1) Delta, six phase, double way. This
               circuit was tested under operational conditions on the
               Yuzhno-Ural'skaya and Sverdlovskaya zheleznaya doroga
Card 1/4   (Sverdlovsk Railroad). 2) Three-phase diametric double

Investigation of Inverter Duty of Type RMNV-500 x 6   SOV/105-58-11-1o/28

way. This was tested on the test stands of the plant
laboratory and on the Sverdlovsk railroad. 3) Delta,
six phase fork. This circuit is almost exclusively
used abroad (Ref 1) in inverter units. R.B.Gafirov, Z.
Kh. Chernin and Ye.V.Libina, Engineers at the
Laboratory for Mercury-Arc Rectifiers of the "Ural-
elektroapparat" plant, assisted in the work. The ex-
perimental array is described. Causes for arc-through
are as follows: A too short period for the regeneration
of the controlling capability of the grid. 2) Arc-back.
3) Extinction of the excitation. 4) Inductance in
the grid circuit. 5) Loss of control during voltage
rise at the valve. The majority of arc-throughs
in a three-phase diametric double way circuit were
recorded for the moment of ignition of the inverse
phase valve. The cause of such arc-throughs is found
in the rapid rise of the direct voltage when the
de-ionization is not yet completed. For this reason
the test stand circuits (which are intended for checking
Card 2/4   the valves for an inverter operation) must be in a

Investigation of Inverter Duty of Type RMNV-500 $\times$ 6$_k$ SOV/1o5-58-11-1o/28

position to supply this positive peak. The absence
of the cathode spot in ignitrons during the non-
conducting period permits to draw the conclusion that
for ignitrons operating in aninverter regime the loss
of control capability during the direct voltage rise
is not dangerous, this fact indicating their suitability
for such a mode of operation. The investigations lead
to the following conclusions: 1) The occurrence of a
considerable number of arc-throughs at the ignition
of the inverse-phase valve made necessary a check of
the requirements placed upon the test stand circuits.
2) An establishment of circuits shunting the valve and
of a reactor coil in the cathode branch with an in-
ductivity of 50 to 1°0 mH considerably increases the
reliability of the RMNV -500 $\times$ 6 rectifier in an inverter
mode of operation. 3) The load level attained (500 A
continuously, 700 A for 15 minutes, and 800 A for 10
minutes) guarantees a regenerative braking operation
of the rectifier. 4) The results of the test runs of the
inverter enabled the plant to construct three test
inverter units for the substations Goytkh and Tverskaya

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Investigation of Inverter Duty of Type RMNV -500 $\times$ 6   SOV/105-;8-11-1o/28

of the Severo-Kavkazskaya zheleznaya doroga (North Caucasus Railway) and the substation Neyvo-Rudyanka of the Sverdlovskaya zheleznaya doroga (Sverdlovsk Railway). The investigation was carried out due to the initiative of Ye.M.Glukh, Candidate of Technical Sciences. There are 8 figures and 5 references, which are Soviet.

ASSOCIATION: Zavod "Uralelektroapparat" (Plant "Uralelektroapparat")

SUBMITTED: May 14, 1957

Card 4/4

FLEYSHMAN, L.S., inzh.; BOBROV, Ye.G., inzh.; SOKOLOV, S.D., kand.tekhn.
nauk

Testing new rectifier units using three-phase bridge systems.
Elek.i tepl.tiaga 3 no.5:20-23 My '59.   (MIRA 12:9)
(Mercury-arc rectifiers)

AUTHOR: Fleyshman, L.S., Engineer   SOV/110-59-7-12/19

TITLE: Special Features of Mercury-Arc Rectifiers in Circuits
with Cathodes at Different Potentials and a Common
Pumping System (Osobennosti rtutnykh vypryamiteley v
skhemakh s raznopotentsial'nymi katodami i obshchey
sistemoy otkachki)

PERIODICAL: Vestnik elektropromyshlennosti,1959,Nr 7,pp 55-58 (USSR)

ABSTRACT: Single-anode mercury-arc rectifiers can be used in a
variety of circuits in which the cathodes are required to
be at different potentials. Applications of such circuits
are mentioned. Rectifiers with the anodes at different
potentials must have insulated ignition, excitation and
grid control systems for the individual valves; in large
systems using pumped valves, the pumping system must also
be insulated. The Uralelektroapparat works has developed
rectifiers with cathodes of different potentials and has
tested them both on the works test bench and in service.
The ignition and excitation circuit of a two-valve
rectifier with cathodes at different potentials was
developed by the author in collaboration with Engineers
V.L. Konev and M.V. Gel'man. The operating principles

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SOV/110-59-7-12/19

Special Features of Mercury-arc Rectifiers in Circuits with Cathodes at Different Potentials and a Common Pumping System

of the circuit are explained with reference to Fig 1. A schematic diagram of the grid control circuit is given in Fig 2; all the valves are fully insulated to earth. Insulation of the pumping system presented problems. The presence in the system of mercury vapour and condensed mercury facilitates flashover. In the first sets each valve was insulated by two porcelain insulators and the vacuum taps were water cooled to prevent penetration of mercury vapour and condensed mercury into the vacuum system. However, faults occurred with this system and improvements had to be made. Possible paths for fault currents are shown in Fig 3, and graphs of voltages and currents in a three-phase bridge circuit rectifier are represented in Fig 4. The occurrence of faults is discussed, showing why certain insulating clearances had to be increased. A graph of the relationship between the valve casing temperature and the flashover voltage between the vacuum tap and casing is shown in Fig 5. It indicates improvement gained by the use of protective bushes to increase the length of the flashover path. The presence

Card 2/4

SOV/110-59-7-12/19

Special Features of Mercury-Arc Rectifiers in Circuits with Cathodes
at Different Potentials and a Common Pumping System

of the main discharge current greatly reduces the flash-
over voltage because of the increased pressure of mercury
vapour and also because electrons from the main discharge
may themselves promote flashovers. High fault currents
will naturally reduce the flashover voltage further. A
set with rectifiers arranged in a three-phase bridge
circuit using a transformer TMR-11000 was erected at a
traction sub-station supplying 3300 V d.c. During type-
testing about 30 artificial short-circuits and backfires
were imposed. The backfire current was approximately
20 000 A but there were no faults in the pumping system.
Neither did any fault occur during five months' operation.
Repeated reclosure on load after backfire caused no
trouble. The tests revealed the necessity of tightening
Card 3/4 up vacuum and temperature conditions: incorrect operation
of the vacuum pumps or failure of cooling-air supply

S OV/110-59-7-12/19

Special Features of Mercury-Arc Rectifiers in Circuits with
Cathodes at Different Potentials and a Common Pumping System

causes discharges in the pumping system as well as the
backfires that occur with normal circuits.   Special
protection is required against the occurrence of such
faults.

Card 4/4   There are 6 figures and 3 Soviet references.

BOBROV, Ye.G., inzh.; GLUKH, Ye.M., inzh.; KOVTUN, N,F., inzh.;
    FLEYSHMAN, L.S., inzh

    Utilization of the power potentials of traction substations.
    Zhel.dor.transp. 43 no.6:22-27 Je '61.
                                                    (MIRA 14:7)
    1. Glavnyy konstruktor po rtutnym vypryamitelyam zavoda
    "Uralelektroapparat" (for Glukh). 2. Nachal'nik konstruktorskogo
    byuro zavoda "Uralelektroapparat" (for Fleyshman).
                        (Electric railroads--Substations)

FLEYSHMAN, L.S., inzh.

Nine-rectifier six-phase circuit for large power rectifying
systems. Elektrichestvo no.5:58-62 My '61.   (MIRA 14:9)

1. Uralelektroapparat.
                    (Electric current rectifiers)
                 (Electric railroads—Current supply)

PROCESSES AND PROPERTIES INDEX

Accumulation of color in massecuite during boiling. L. R. Fleishman and G. K. Virakaya. *Nauk. Zapiski Tsukrovoi Prom.* 10, No. 33, 121-7(1932). —The color of sugar depends on the amt. and quality of nonsugars. With a higher nonsugar content in the massecuite the color of the sugar increases. A decrease of one hr. in boiling time decreases color of the sugar by 22%. White and green sirups used for boiling and also as feed liquor increase the color of sugar. — V. R. Balkow

A3H-SLA   METALLURGICAL LITERATURE CLASSIFICATION

Return of molasses to the diffusion battery. L. E. Fleishman and S. I. Korol'kov. *Trudui Zavodiskikh Laboratorii Lab. Sakhar. Zavodov (Voronezh. Sakharnuklotrest.)* No. 2, 91–145(1935).—Lab. and factory-scale expts. show that by returning molasses to the diffusion battery the passage of nonsugars from the tissues of the cossettes into the diffusion juice is hindered by about 13%, as compared with the ordinary procedure. When half the production of molasses is returned, the juice draft must be increased 10% and the time of boiling and of centrifuging is increased. There are other disadvantages, and altogether the practice is not recommended.

H. C. A.

BC

$B - II - 2$

PROCESSES AND PROPERTIES INDEX

Return of [...] to the diffusion battery. L. E. [...] and [...] (Trudi Zaved., 1935, No. 11 [...], [...] 3, [...] 39, 109).—Laboratory and factory-scale experiments show that by returning [...] to the diffusion battery the passage of non-sugars from the tissue of the cossettes into the diffusion juice is hindered by about 12%, as compared with the ordinary practice. When half the production is [...], the [...] draft must be increased 10%, and the time of [...] and of centrifuging is increased. There and other disadvantages, and altogether the practice is not recommended. J. P. O.

ASB-3LA   METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

Apparatus for defecation of sugar juices. L. E. Fleishman. U.S.S.R. 64,305, May 31, 1945. M. H.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MELAMID, ,. E., PLEYSHMAN, L. YE.

Beets and Beet Sugar

Determination of sucrose on long stored sugar beets. Sakh. prom.26. No. 3,1952

9. Monthly List of Russian Accessions, Library of Congress, June 1952. 1953, Uncl.

SAVKO, D. P., BRAMNIK, D. B., KHELEMSKIY, M.Z. FLEYSMAN, L.YE.

Efficiency, Industrial

Utilization of intra-industry potentialities. Sakh. prom. 26 No. 6 (1952)

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

1. FLEYSHMAN, L. Ye.

2. USSR (600)

4. Beets and Beet sugar

7. Struggling for a high quality of acceptable beets. Sakh. prom. 26 no. 10, 1952

9. Monthly List of Russian Accessions, Library of Congress, January   1953. Unclassified.

FLEYJHMAN, L. {e.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Sugar, Starch, and Gums

Determination of the initial weight of the beet from the weight of rotten tissue. L. E. Fleishman. *Sakharnaya Prom.* 27, No. 4, 16-21(1953).—This detn. is based on the fact that the ash of the rotten tissue of beet root does not decomp. and lose wt. Therefore, the ratio of the ash of the rotten part to the ash of the well-preserved part is indicative, and the initial wt. of beet root can be calcd. from the formula: $C = D [P_2 - (n - g) - (g \times K)] 0.01 + D_1 (n - g)0.01$, where C is the amt. of sugar in beets (in centers), D is the sugar content of the beet, D_1 is the sugar content of the beet after rotten tissue is removed, P_2 is the wt. of beets, n is the amt. of beets from silos, g is the wt. of rotten tissue of the beet, and K is the coeff. of the wt. of rotten tissue on the original wt. of beet, calcd. from the ash ratio.   V. E. Baikow

FLEYSHMAN, L.Ye.

Ways to decrease sugar losses. Sakh.prom. 27 no.8:19-21 Ag '53.

(MLRA 6:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy promyshlennosti
(Beets and beet sugar)

FLEYSHMAN, L.Ye.

Ways of lowering losses of sugar beets. Sakh.prom. 28 no.6:11-15
'54.   (MLRA 7:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
        (Sugar beets--Transportation)

FLEYSHMAN, L.Ye.

Causes for increased amount of sugar in feed molasses at the
Zherdevka Sugar Factory. Sakh.prom. 30 no.4:23-27 Ap '54.
(MIRA 9:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
(Zherdevka--Sugar industry) (Molasses)

FLEYSHMAN, L.Ye.

Increasing the productive capacity of sugar plants. Sakh.prom.
30 no.8:11-14 Ag. '56.   (MLRA 9:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
                    (Sugar industry)

SHAKIN, A.N.; FLEYSHAMAN, L.Ye.

Evaluate the findings on operation of a separator section at the
Yelan'-Koleno Sugar Plant. Sakh. prom. 31 no.2:5-10 F '57.
(MLRA 10:4)

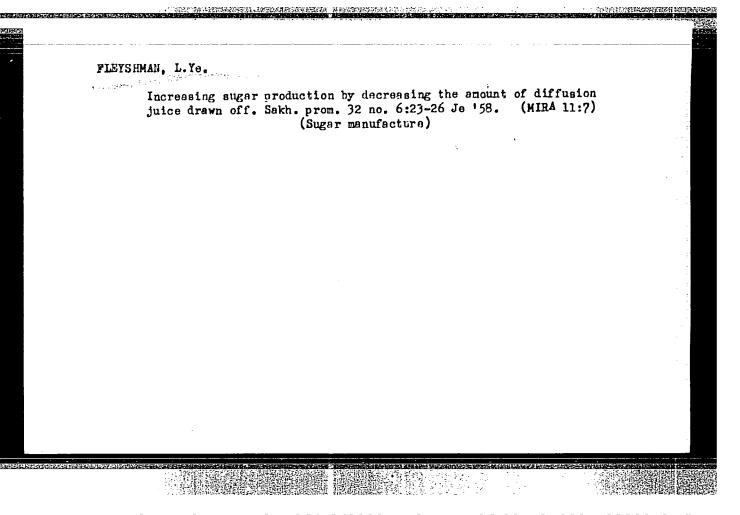1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy pro-
myshlennosti.
(Yelan'-Koleno--Sugar industry)

FLEYSHMAN, L.Ya.;ARTEMOVA, N.Ya.

Additional crystallization of massecuite in the mixers. Sakh.prom.
32 no.9:10-11 S '58.   (MIRA 11:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
                  (Sugar manufacture)

FLEYSHMAN, L.Ye.

Increasing sugar production by decreasing the amount of diffusion
juice drawn off. Sakh. prom. 32 no. 6:23-26 Je '58.   (MIRA 11:7)
                         (Sugar manufacture)

FLEYSHMAN, L.Ye.

Technical and economical effectiveness of sugar recovery from
feed molasses. Sakh.prom. 32 no.10:55-58 O '58.   (MIRA 11:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
(Sugar manufacture)

PRIYMAK, M.P.; FLEYSHMAN, L.Ye.

Productive capacity of the Kuban Sugar Factory No.2 has doubled.
Sakh. prom. 33 no.2:6-10 F '59.   (MIRA 12:3)

1.Korenovskiy sakharnyy zavod (for Priymak). 2.TSentral'nyy
nauchno-issledovatel'skiy institut sakharnoy promyshlennosti
(for Fleyshman)
        (Krasnodar Territory--Sugar industry)

FLEYSHMAN, L.Ye.

Does separation affect the increase of sugar output in
long-period production? Sakh. prom. 33 no.8:20-26 Ag '59.
(MIRA 12:11)

1.TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti (TsINS).
(Sugar manufacture)

FLEYSHMAN, L.Ye.; KAZIMIROV, R.K.

Get the maximum amount of sugar from newly harvested sugar beets. Sakh.prom. 33 no.9:6-10 S '59.   (MIRA 13:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy promyshlennosti.
(Sugar beets)

SHAKIN, A.N.; FLEYSHMAN, L.Ye.; KAZIMIROV, R.K.

Eliminate equipment shortcomings in the separation sections
of sugar factories. Sakh.prom. 33 no.10:11-18 O '59.
(MIRA 13:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
(Sugar machinery)

FLEYSHMAN, L.Ye.

For the minimum duration of technological processes. Sakh.prom.
34 no.7:21-23 Jl '60.   (MIRA 13:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti.
                    (Sugar manufacture)

FLEYSHMAN, L.Ye.; LISICHENOK, V.S.; VAS'KO, T.P.; PSALOM, P.G.

Production of sugar and yeast from feed molasses.   Sakh. prom.
35 no.8:11-16 Ag '61.   (MIRA 14:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti (for Fleyshman, Lisichenol). 2. Ukrainskiy
nauchno-issledovatel'skiy institut spirtovoy promyshlennosti
(for Vas'ko, Psalom).
                    (Sugar manufacture)
            (Yeast)   (Molasses)

KLEYMAN, B.M.; MALYUTIN, G.I.; FLEYSHMAN, L.Ye.

Complete utilization of sugar beets. Sakh.prom. 36 no.5:5-13 My
'62.   (MIRA 15:5)

1. Gosplan SSSR (for Kleyman). 2. Gul'kevicheskiy sakharnyy zavod
(for Malyutin). 3. TSentral'nyy nauchno-issledovatel'skiy institut
sakharnoy promyshlennosti (for Fleyshman).
                        (Sugar industry)

FLEYSHMAN, L.Ye.

Storage of beet pulp and its enrichment with nitrogen-containing substances. Sakh.prom. 37 no.2:14(94)-19(99) F '63. (MIRA 16:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy promyshlennosti.

(Sugar industry--By-products)

FLEYSHMAN, M.Ya.

Automated controlled electric drive for the smooth start-up
of beam-well units. Izv. vys. ucheb. zav.; neft' i gaz 7
no.9:99-101 '64.   (MIRA 17:12)

1. Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova.

FLEYSHMAN, M.Ya.

Automated controlled electric drive for the smooth start-up of a
beam-well unit. Izv. vys. ucheb. zav.; neft' i gaz 8 no.4:89-90
'65.   (MIRA 18:5)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.

FLEISHMAN, N.P. (L'vov); ROZENTAL', Yu.G. [Rozental', IU.H. (L'vov); MARKOVSKA, Ye.V. [Markovs'ka, O.V.] (L'vov); ARUTIUNIAN, I.A. (L'vov)

Stresses caused by a local deflection in hoists of motor and electric loaders. Prykl. mekh. 10 no.5:535-546 '64.
(MIRA 17:10)

1. L'vovskiy gosudarstvennyy universitet.

FLEYSHMAN, N. P.

Savin, G. N. and Fleyshman, N. P. - "The effect of elastic rings soldered into a circular opening of a horizontal multiple-intensity field," Doklady Akad. nauk. Ukr. USSR No. 5, 1948, p. 17-26, (In Ukrenian resume in Russian)

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

FLEYSHMAN, N. P.

Savin, G. N. and Fleyshman, N. P. - "The bend of a cantilever beam having a circular opening reinforced by an elastic ring," Doklady Akad. nauk Ukr. SSR, No. 5, 1948, p. 27-41, (In Ukranian, resume in Russian)

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

FLEYSHMAN, N. P.

Savin, G. N. and Fleyshman, N. P. - "The bend of thin plates having a circular opening reinforced at the end with a flexible ring," Doklady Akad nauk Ukr. SSR. No. 6, 1948, p. 34-44, (In Ukranian, resume in Russian), - Bibliog: 7 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

SAVIN, G.M.; FLEYSHMAN, N.P.

Bending of a thin triangular plate with a reinforced circular aperture.
Dop.AN URSR no.1:3-10 '49.   (MLRA 9:9)

1.Diysniy chlen AN URSR (for Savin).2.L'vivs'kiy viddil teorii prushnesti
Institutu matematiki AN URSR.
          (Elastic plates and shells)

FLEYSHMAN, E.P.

One contact problem in the theory of elasticity in the sense of
H.N. Savin. Dop. AN URSR no.2:12-16 '49.   (MLRA 9:9)

1. L'vivs'kiy fiddil matematichnoi teorii prushnosti Institutu
matematiki AN URSR. Predstaviv diysniy chlen AN URSR G.M. Savin.
                    (Elasticity)